

Index and User Guide

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UNDERWATER SHIP HUSBANDRY MANUAL

CHAPTER 1 INDEX AND USER GUIDE



This manual supersedes S0600-AA-PRO-010 dated 1 June 1996.

DISTRIBUTION STATEMENT A: This document has been approved for public release and sale; its distribution is unlimited.

LIST OF EFFECTIVE PAGES

Date of issue for original is:

Original 1 October 1998

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 14, CONSISTING OF THE FOLLOWING:

Page No.	* Change No.
Title and A	0
Certification Sheet	0
Blank	0
Flyleaf-1 (Flyleaf-2 blank)	0
iii/(iv blank)	0
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* Zero in this column indicates an original page.



NAVSEA TECHNICAL MANUAL CERTIFICATION SHEET1 of 1Certification Applies to: New Manual ☐ Revision ☒ Change ☐

Applicable TMINS/Pub. No. S0600-AA-PRO-010

Publication Date (Da, Mo, Yr) 1 October 1998

Title: Underwater Ship Husbandry Manual, Chapter 1, Revision 2, Index and User GuideTMCR/TMSR/Specification No.: NDMS-870136-000**CHANGES AND REVISIONS:**Purpose: Complete revision to original chapterEquipment Alteration Numbers Incorporated: NoneTMDER/ACN Numbers Incorporated: None*Continue on reverse side or add pages as needed.***CERTIFICATION STATEMENT**

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Authority	Name	Signature	Organization	Code	Date
Acquisition	M. S. DEAN		NAVSEA	00C5	10/22/98
Technical	M. S. DEAN		NAVSEA	00C5	10/22/98
Printing Release					

DERIVED FROM NAVSEA 4160/8 (5 - 89)

RECORD OF CHANGES

CHANGE NO.	DATE OF CHANGE	TITLE AND/OR BRIEF DESCRIPTION	ENTERED BY

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CHAPTER 1

INDEX AND USER GUIDE

SECTION 1 INTRODUCTION

1-1.1 BACKGROUND.

Underwater ship husbandry is defined as inspection, maintenance, and repair of the underwater hull and hull appendages of waterborne ships, submarines, and craft. Although the United States Navy has been performing underwater ship husbandry as a consequence of salvage and battle damage repair since World War II, the *Underwater Work Techniques Manual* (NAVSEA 0994-LP-007-8010 and NAVSEA 0994-LP-007-8020), published in 1971, was the first attempt to compile and publish these procedures. Since that time, significant advances have been made in technology and in diver training, and significant changes have occurred in design, construction, size, sophistication, and complexity of Navy ships and submarines. Thus, new procedures and equipment have been developed, of necessity to make the performance of underwater ship husbandry safer, more efficient, and more effective. There is also now a requirement to invoke stringent quality control for all maintenance and repair efforts on these modern, sophisticated, and complex hulls, hull coatings, and hull appendages to ensure they function as designed.

1-1.2 PURPOSE.

The purpose of this manual is:

- a. To replace NAVSEA 0994-LP-007-8010 and NAVSEA 0994-LP-007-8020, which are obsolete.
- b. To revise completely and expand the information contained in NAVSEA 0994-LP-007-8010 and NAVSEA 0994-LP-007-8020.
- c. To compile and disseminate available technical information and NAVSEA-

approved procedures for all underwater ship husbandry tasks.

- d. To serve as a guide and reference for personnel engaged in underwater ship husbandry.
- e. To ensure stringent quality control before, during, and after completion of the work effort.

1-1.3 SCOPE.

The information, techniques, and procedures presented in this manual are limited to the underwater inspection, maintenance, and repair of the underwater hull and hull appendages of ships, submarines, and craft. Also included are the specific tools and equipment used in such work. This manual is not intended to supersede, replace, or repeat information contained in equipment technical manuals, diving manuals, or other technical publications such as the *Naval Ships' Technical Manual* (NSTM), nor is it intended to address other areas of underwater work such as search, recovery, or salvage.

1-1.4 APPLICABILITY.

This manual is for use by all personnel concerned with planning, supervising, performing, and inspecting underwater ship husbandry tasks. Maintenance policy for Naval ships (OPNAVINST 4700.7) requires that all underwater ship husbandry inspection, maintenance, or repair actions be planned and accomplished in accordance with this technical manual. For engineers and repair officers, it serves to assist in planning and scheduling maintenance for and repairs to a ship's hull and appendages and in the decision to dry-dock or to accomplish necessary work while

waterborne. Supervisory personnel will find the manual to be a useful tool in monitoring the work of divers and in preparing and executing the requisite stringent quality control programs necessary for underwater work to be successful and to be considered a permanent repair. The guidelines and procedures presented in this manual will be of great value to divers performing ship husbandry tasks. They are designed to provide optimally safe working conditions, to improve the diver's effi-

ciency, and to standardize the approach to underwater ship husbandry throughout the Fleet. Where applicable, these procedures, when correctly performed, will result in permanent repairs, thus avoiding costly unscheduled dry-docking. No deviations from the NAVSEA-approved procedures are permitted without prior approval from NAVSEA, because any deviations from the procedures can exacerbate the existing problem or create new problems requiring dry-docking to resolve.

SECTION 2 ADMINISTRATIVE INFORMATION

1-2.1 MAINTENANCE OF THE MANUAL.

The *Underwater Ship Husbandry Manual* (UWSHM) is developed and prepared by the Naval Sea Systems Command (NAVSEA), Code 00C. The UWSHM is a multichapter document, with each chapter separately bound and with a different title and topic. Each chapter is assigned a title, chapter number, and publication number when its development and preparation are approved and authorized. Chapters are distributed to cognizant activities as they are prepared and may not be in numerical sequence when issued. The UWSHM is similar in structure to the *Naval Ships' Technical Manual* (NSTM) in that each chapter is intended to stand alone and provide the user with sufficient information to undertake and complete a particular ship husbandry task.

1-2.2 DISTRIBUTION.

The Naval Sea Data Support Activity (NSDSA), Port Hueneme, maintains the UWSHM distribution lists and will evaluate, verify, and validate initial issue and all requests for the UWSHM. Sea and shore commands that perform underwater ship husbandry will receive initial issues of individual chapters and all changes and revisions without further action on their parts. Activities not included on the distribution list may request that they be added to the list by contacting:

Commander
NSDSA Code 5B00
NAVSURFWARCENDIV
4363 Missile Way
Port Hueneme, CA 93043-4307

1-2.3 CHANGES AND REVISIONS.

Changes and revisions to the UWSHM are issued by NAVSEA and may be in the form of formal changes, revisions, or advance change notices (ACNs).

1-2.4 FORMAL CHANGES.

A formal change comprises one or more replacement pages for an existing chapter, issued to holders of record and intended for insertion into the appropriate document. Formal changes are printed and published as permanent replacements for parts of chapters of the UWSHM until they, in turn, are superseded by a subsequent change or revision.

1-2.5 REVISIONS.

A revision is a superseding issue of an entire chapter, issued to holders of record. Revisions incorporate all previously issued changes. Revisions are printed and published as replacements for whole chapters of the UWSHM until they, in turn, are superseded by a subsequent revision.

1-2.6 ADVANCE CHANGE NOTICES.

An ACN is prepared as a temporary change to a chapter of the UWSHM when there is insufficient time to prepare and publish a formal change. ACNs are distributed by NAVSEA by message or letter to holders of record. Formal changes and chapter revisions incorporate previously issued ACNs.

1-2.7 FEEDBACK.

Any apparent error, omission, or possible beneficial change (no matter how small or large), that any user considers to be an improvement to the UWSHM may be reported to:

Commander
NSDSA Code 5B00
NAVSURFWARCENDIV
4363 Missile Way
Port Hueneme, CA 93043-4307

To facilitate feedback commentary, copies of form NAVSEA 4160/1, Technical Manual Deficiency/Evaluation Report (TMDER), are included at the end of each newly published or

revised chapter. The completed form may be folded and stapled, revealing the pre-addressed, franked cover. No further address is required. All feedback comments will be investigated thoroughly and originators will be advised of any action resulting therefrom. Additional copies of form NAVSEA 4160/1 may be requisitioned from:

Commanding Officer
NAVICP
700 Robbins Ave.
Philadelphia, PA 19111-5098

The stock number for the TMDER is 0116-LF-019-5300 and must be used when requesting the form. Further assistance also may be provided by calling Customer Service at (215) (DSN 442) 697-2626 or -2997. It is recommended that the stock number be readily available when calling.

1-2.8 ELECTRONIC VERSIONS.

Electronic versions of all UWSH chapters (both Distribution Statement A and Distribution Statement C) are periodically distributed to all concerned activities on CD-ROM. Electronic versions of Distribution Statement A chapters also are posted on the NAVSEA 00C Website (www.navsea.navy.mil/sea00c) where they are available for downloading.

In the future, due to fiscal constraints, hard copies of UWSHM chapters no longer will be produced, distributed, or available. Electronic versions will be the primary method of distribution. Activities involved in underwater ship husbandry tasks should refer to the NAVSEA 00C website to ensure that they have the current version of the applicable UWSHM chapters.

SECTION 3 INDEX OF CHAPTERS

1-3.1 INDEX OF CHAPTERS.

Table 1-1 lists all currently planned or existing chapters of the *Underwater Ship Husbandry*

Manual and, where applicable, contains the current change or revision status, date of issue, and stock number.

Table 1-1. Index of Chapters.

Chapter Number	Chapter Title and TM Identification Number	Change/Revision Number	Date of Issue	Remarks or Stock Number
1	Index and User Guide S0600-AA-PRO-010	2	10-1-98	0910-LP-018-0350
2	General Information and Safety Precautions S0600-AA-PRO-020	0	9-1-87	0910-LP-310-0700
3	Propellers S0600-AA-PRO-030	1 w/Ch 1	8-15-95 9-15-98	0910-LP-588-9100
4	Auxiliary Propulsion Units S0600-AA-PRO-040	1 w/Ch 1	12-1-96 8-15-98	0910-LP-596-3101
5	Masker Emitter Belts S0600-AA-PRO-050	2	2-23-95	0910-LP-709-9900
6	Submarine Sonar Systems S0600-AA-PRO-060	1	6-1-96	0910-LP-412-0500
7	Nondestructive Testing S0600-AA-PRO-070	0	6-15-94	0910-LP-314-1600
8	Secondary Propulsion Motors S0600-AA-PRO-080	1	10-1-98	0910-LP-019-9250
9	Rubber Sonar Domes S0600-AA-PRO-090	0	3-1-98	0910-LP-411-8700
10	Diver Tools S0600-AA-PRO-100	0		Under development
11	Wet and Dry Chamber Welding S0600-AA-PRO-110	0	8-15-96	0910-LP-411-8900
12	Controllable Pitch Propellers S0600-AA-PRO-120	1	10-30-98	0910-LP-019-9270
13	Propulsion Shaft Covering Repair S0600-AA-PRO-130	0	6-18-95	0910-LP-411-9300
14	Six-Inch Countermeasures System S0600-AA-PRO-140	0		Under development

Table 1-1. Index of Chapters.

Chapter Number	Chapter Title and TM Identification Number	Change/ Revision Number	Date of Issue	Remarks or Stock Number
15	Protection Sleeves and Sea Chests S0600-AA-PRO-150	0	8-1-97	0910-LP-411-9800
16	Cofferdams S0600-AA-PRO-160	0	2-1-96	0910-LP-464-1600
17	Inspection Procedures S0600-A-PRO-170	0	10-1-96	0910-LP-447-6100
18	Propulsion Bearings S0600-AA-PRO-180	0	6-15-97	0910-LP-533-3100
19	Cathodic Protection S0600-AA-PRO-190	0	6-15-97	0910-LP-730-7400
20	Painting and Fairing Compounds S0600-AA-PRO-200	0		Under development
21	Fiberglass Hulls S0600-AA-PRO-210	0		To be developed
22	SSN Bow Domes S0600-AA-PRO-220	0		Under development
23	Submarine Pre-Deployment Noise Inspection S0600-AA-PRO-230	0	1-1-97	0910-LP-004-4130
24	Fin Stabilizers S0600-AA-PRO-240	0		Under Development